

Eduard Čech Center

Report summary on activities in the year 2005 (the full report is available in Czech)

The project was launched with 4 months delay in May 2005. The main (organizational) goal of the center is an institutional background for longer post-doc positions and short time visiting positions. Thus the competitions for 6 post-docs and setting up the executive measures within the three partner institutions were the major task in Spring and Summer 2005. Finally, the following mathematicians were suggested a contract and accepted:

Doojing Hong (Masaryk University, Brno), PhD in 2004 at University of Iowa, working on spectral invariants and higher order operators on spinor fields.

Michal Bulant (Masaryk University, Brno), PhD in 2003 at Masaryk University, working in the area of algebraic number theory.

Alberto Damiano (Charles University, Prague), PhD at George Mason University, Fairfax, working on algebraic and computational aspects of the theory of invariant differential operators.

Pavel Příhoda (Charles University, Prague), PhD in 2005 at Charles University, working on algebraic theory of modules.

Allan Skelley (Mathematical Institute of CAS, Prague), PhD in 2005 in Toronto, working in computational complexity.

Rafal Walczak (Mathematical Institute of CAS, Prague), PhD in Wrocław in 2004, working in symplectic topology.

Uli Fahrenberg has also accepted our suggestion originally, but he could not come for technical reasons (although a direct collaboration with the category theory team in Brno has been initiated and will continue in 2006 anyhow). Because nearly all the above mentioned post-docs were not able to commence their positions early enough, some remaining funds were used to support further young post-docs at the three institutions. Unfortunately, the general rules did not allow to re-allocate funds between the individual years and we would have to return the money back otherwise. Thus, the full list of supported post-docs includes also: Ondřej Klíma (MU), David Stanovský (UK), Dalibor Šmíd (UK), Svatopluk Krýsl (UK), Murtinová Eva, PhD. (CAS), Hanika Jiří, PhD. (CAS), Holub Štěpán, PhD. (CAS).

All new members of the staff have gradually started to work on the projects of their own, together with many doctoral students and staff of the three institutions involved.

Another part of the funding aimed at visiting positions of foreign mathematicians at the center but also at travel costs of the members of our team. The list of visitors (partly acting in workgroups) involves

- Alekseevsky (Hull, Great Britain), Neretin (Wien, Austria), 1 week, June 2005, Brno, differential geometry,
- Harris (Armidale, Australia), 2 weeks, December 2005, Brno, differential geometry,
- Vladimir Repnitskij (Russia), 2 weeks, May 2005, Prague, general algebra,
- Michal Stronkowski (Poland), 1 week, December 2005, Praha, general algebra
- E. Enochs (USA), L. Angeleri, E. Gregorio (Itálie), 1 week, September 2005, Prague, module theory
- M. Eastwood (Australia), 3 weeks, October 2005, Prague, differential geometry,
- R. Gover (Nový Zéland), 3 weeks, Prague, differential geometry,

- Stevo Todorčević, CNRS Université de Paris 7 and University of Toronto, 1 week, September 2005, Prague
- Adrian Andrada, the Abdus Salam International Centre for Theoretical Physics, Trieste and University of Cordoba, Argentina, 1 week November 2005, Praha,
- Sy D. Friedman, Kurt Gödel Research Center, University of Vienna. Lecture at 6th Logic Colloquium, November 2005.

The geometric part of the group also focused on the traditional Central European seminars which took part on April 8, October 14 and December 16 in Brno (about 20 participants each). The main common workshop for the entire team was the Kick-off Meeting of the Eduard Cech Center in Telc, November 11-12 (more than 30 participants with some foreign guests).

The young members of the team were supported during the following trips:

Michal Bulant – 1 month at Universität der Bundeswehr in Munich, November 2005, working with Cornelius Greither,

P. Příhoda – 1 month at Universitat Autònoma de Barcelona, December 2005

D. Stanovský took part in School on Unconditional Security of Cryptographic Protocols, October 2005, organized by ECRYPT, the European excellence center.

Dalibor Šmíd took part at the International Conference on Clifford algebra and their applications in Toulouse,

Dalibor Šmíd and Svatopluk Krýsl took part at the Winter School Geometry and Physics in Srní, Czech Republic.

The obstructions represented by the Czech legal system towards the employment of foreigners were the main organizational problem. This was also the main reason for all the postponed beginnings of the opened positions. There is a good hope to go better in 2006.

The research is oriented into various directions according to the original plans. The list of results achieved with the full support of the center involves the following preprints of papers:

Michal Bulant, Cornelius Greither, Annihilators for the class group of a cyclic field of 2-power degree, preprint

J. Krajíček, Thapen, Skelley, Forcing with random variables, Part I., preprint

J. Trlifaj, L. Angeleri, J. Šároch, On the telescope conjecture for module categories, preprint MATH-alg-2005/21, submitted to Journal of London Mathematical Society,

P. Příhoda, Projective modules are determined by their radical factors, preprint MATH-alg-2005/26,

D. Stanovský, Subdirectly irreducible non-idempotent left distributive left quasigroups, preprint

M. Eastwood, P. Somberg, V. Souček: The uniqueness of the Joseph ideal for the classical groups, preprint, math.RT 0512296

S. Krýsl, Classification of p -homomorphisms between higher symplectic spinors, accepted in Proc. Winter School Geometry and Physics, Srní, v Suppl. di Rend. Circ. Mat. Palermo